Integrated Global-Sun Model of Magnetic Flux Emergence and Transport

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Synopsis of the Project

Two major elements to the effort:

1. Forecast (Technology) - Enhance the Air Force Data Assimilation Photospheric flux Transport model (ADAPT) by assimilating SDO-HMI data
2. Understanding (Science) - Develop Coupled Models for Emerging flux Simulations (CMES) within the Space Weather Modeling Framework (SWMF) by coupling:

    a) FSAM code, Fan [2008]: Deep convection zone.
    b) Stagger code, Stein et al. [2011]): Subsurface and photoshpere.
    c) Corona Module (CM) in BATS-R-US, Fang et al. [2012]: Subsurface to the Corona.

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